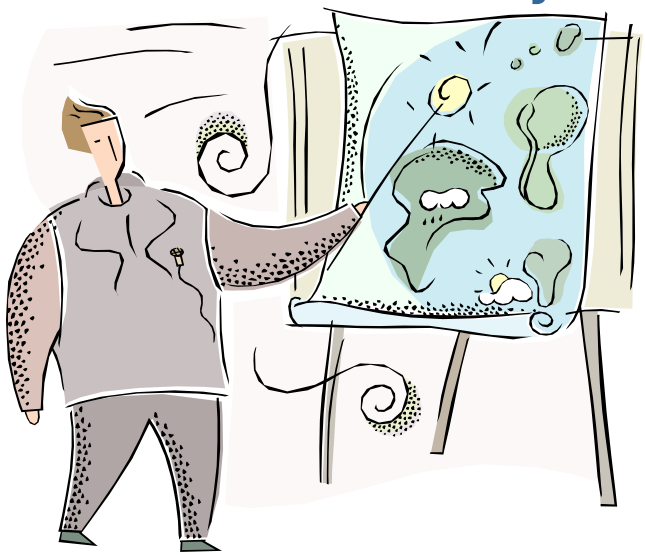
Severe Summer Weather

Contents

- Brief Definitions
- Safety Tips
  - Tornadoes
  - Hurricanes
  - Thunderstorms
  - Lightning
  - Hail
  - Flooding
  - Blackouts
- Severe Weather Preparedness Tips
- Evacuation and Return Tips

Watch vs. Warning

- Weather Watch: Conditions indicate that a severe weather event may occur in a given area



- Weather Warning: A severe weather event has developed and is moving into a specific area

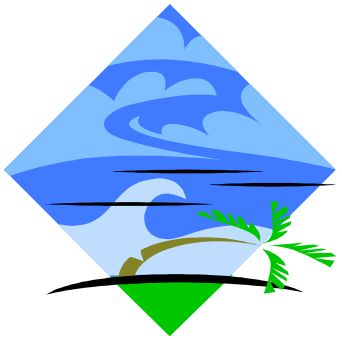
Basics: Tornadoes

- A violently rotating column of air extending from a thunderstorm to the ground
  - May appear nearly transparent until dust and debris are picked up or a cloud forms within the funnel
  - Has an average forward speed of 30 mph and rotating winds of 110 or less
  - Moves generally from Southeastern to Northeastern United States
  - Can be one mile wide and stay on the ground over 50 miles
  - Can accompany tropical storms and hurricanes as they move on land
  - Identified as a dark, often greenish sky; large hail; or a loud roar similar to a freight train
- Can occur any time of the year anywhere in the US but most frequent east of the Rocky Mountains during the spring and summer months
- Mostly likely to occur between 3 and 9 p.m.
- Every year in the US there are an average of 1,200 tornadoes that cause an average of 70 fatalities and 1,500 injuries
  - People who are in mobile homes and automobiles are most at risk
  - Violent winds and debris slamming into buildings cause the most structural damage

Safety Tips: Tornadoes

- No place is absolutely safe from a tornado.
- Do not stay in an automobile or mobile home.
- Do not try to outrun a tornado in your automobile.
- Put as many walls as possible between you and the outside and get under a sturdy piece of furniture.
- Seek shelter in a basement or interior room away from windows and doors.
  - If a basement is not available: a closet, bathroom, or interior hall will suffice.
  - If you are outside: lie flat in a ditch or ravine with your hands shielding your head.

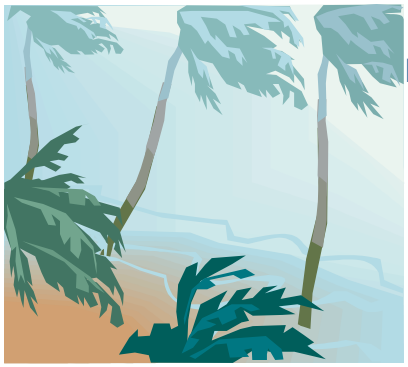
Basics: Hurricanes



- Also know as Cyclones in the Indian Ocean and Typhoons in the North Pacific
- Intense tropical weather system with winds that reach a constant speed of at least 75 mph that can spread outward 400 miles
- Winds blow in a large spiral around a relative calm center known as the “Eye”
  - The “Eye” is generally 20-30 miles wide.
  - The most violent winds and rain take place in the right side of the “Eye” wall.
- Season lasts from June through November
  - August and September are the peak months
- There are 11 tropical storms in an average year.
  - Six of which will become hurricanes in the Atlantic, Caribbean, or Gulf areas.
- Wind speed decreases significantly within 12 hours of landfall.
- As a hurricane nears - the skies darken, winds grow in velocity, and rainfall becomes severe.
- Can produce storm surge, tornadoes, and inland flooding

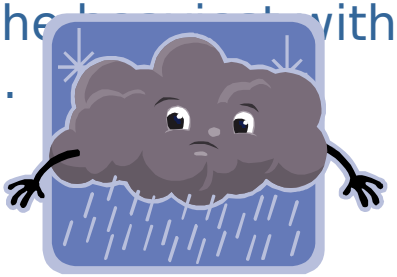
Safety Tips: Hurricanes

- When advised to evacuate – do so without delay!
- If not advised to evacuate:
  - Secure and brace exterior doors.
  - Stay inside away from windows and doors. Close all interior doors.
  - Lie on the floor under a sturdy object.
  - Turn refrigerator to highest cold setting and keep door closed.
  - Turn off propane tanks and unplug small appliances.
- If in a multistory building:
  - Always get to the lowest possible floor.
  - It is recommended to shelter in the interior of the 1st or 2nd floor.
  - However, if that is not possible, try to stay [illegible]r but above floors at risk of flooding.



Basics: Thunderstorms

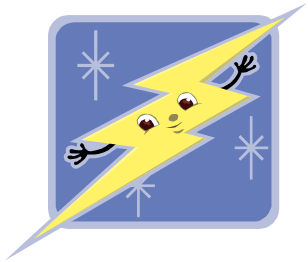
- Thunderstorms can develop with little or no warning and reach severe conditions within minutes.
  - Of the estimated 100,000 thunderstorms each year, about 10 percent are classified as severe.
- All thunderstorms are dangerous.
  - Lightning occurs with all thunderstorms.
  - Besides lightning, thunderstorms produce tornadoes, strong winds, flash flooding, and hail.
- Thunderstorms are typically 15 miles in diameter and last an average of 30 minutes.
- There is a potential for flash floods or landslides with thunderstorms.
- Rainfall is usually the heaviest with slower moving storms (less than 10 mph).



Safety Tips: Thunderstorms

- Get inside a house, large building, or automobile as soon as possible.
- If caught outdoors: do not stand near a tall isolated tree or the tallest tree in a group.
- If caught driving:
  - Slow down.
  - Turn on windshield wipers and headlights.
  - Increase following distance.
  - Listen to radio for regular weather reports and traffic updates.
  - Pull over if visibility is limited. If possible, find a parking lot or side street. Put on flashers and pull as far off as possible.
- If caught on the water, return to land and find shelter immediately.
  - Winds can capsize boats.
  - Sailboats act as lightening rods.

Basics: Lightning



- Lightning results from the buildup and discharge of electrical energy between positively and negatively charged areas.
- Lightning is present in all thunderstorms and is very dangerous.
- There is no warning sign for lightning strikes.
  - Lightning strikes the earth about 20 million times each year or about 100 times every second.
  - Lightning may strike even if it is not raining. It may occur as far as 10 miles away form any rainfall.
- More people are killed from lightning strikes than tornadoes or hurricanes.
  - An average of 65 people are killed each year in the US and over 300 are injured.
  - Most injuries and fatalities occur when people are caught outdoors especially under or near tall trees, in or on the water, or near hilltops.
  - You do not have to be directly hit by lightning to be affected. It can jump from nearby objects that are struck or can travel along the ground from a nearby strike.
  - Lightning strikes are prevalent in the summer months during the afternoon and evening hours in the South, Southwest, and Midwest regions.
- Lightning also causes property damage. Many fires in Western US and Alaska are started by lightning.

Safety Tips: Lightning

- No place is absolutely safe.
  - The best shelter is an enclosed building with electrical wiring and plumbing. Stay away from windows, doors, and fireplaces.
  - The next best place to shelter is an enclosed metal vehicle with the windows up. Do not park under trees.
- If outdoor activities are planned, postpone them.
- If you are outside:
  - Take shelter under the shortest trees.
  - Find a ditch. Kneel on the ground and lean forward with your head lower than your back and place your hands on your thighs. Do not lie flat on the ground!
  - If you are in a crowd, spread out. Stay at least 15 feet apart.
- If boating or swimming:
  - Return to land and find shelter immediately.
  - If not, get as low as you possibly can by sheltering in the cabin of the boat.
- If driving, pull off the roadway. A lightning flash can startle a driver and cause temporary blindness especially at night.
- Stay away from metal objects such as fences, machinery, or sheds. Do not carry metal items such as umbrellas, tools, or golf clubs.
- Discontinue the use of any electrical appliances to include air conditioners and telephones.
- Avoid showering or bathing during thunderstorms.
- Follow the “30\30 Rule”. Go indoors, if after seeing lightning you cannot count to 30 before hearing thunder. Stay indoors for 30 minutes after hearing the last clap of thunder.

First Aid: Lightning Strike

- A lightning strike can cause long-term debilitating symptoms such as:

Memory loss	Attention deficits
Sleep disorder	Numbness
Dizziness	Irritability
Fatigue	Stiffness in joints
Weakness	Muscles spasms
Depression	Nerve damage
Broken bones	Electrical burns

Loss of hearing or eyesight

- It is okay to touch people struck by lightning. They carry no electrical charge.
- If someone is struck by lightning: call 911 and begin CPR immediately. Use an Automatic External Defibrillator (AED) if available.

Basics: Hail

- Large frozen stones of water that fall at speeds faster than 100 mph
- Causes more than $1 billion in damage to property and crops each year
- Shelter cars, machinery, and equipment in a garage or shed
- If you are caught outdoors without shelter, crouch down and protect your head and neck.

Basics: Flooding

- Flooding occurs most often at night.
- Never underestimate the power of moving water.
  - Less than 6 inches of water can sweep someone off their feet.
  - Two feet of water will float a car.
- Heavy rain often accompanies thunderstorms. Flooding from thunderstorms are the #1 cause of deaths associated with thunderstorms with more than 140 fatalities each year.
- Nearly half of flash flood fatalities are auto related.
- Inland flooding is the product of hurricanes.
  - Inland flooding is a major threat to communities hundreds of miles from the coast.
- Storm surge is the greatest threat to life and property along the immediate coast.
  - It is water that is pushed toward shore by the force of winds swirling around the storm.
  - It combines with normal tides to create a hurricane storm tide which increases the main water level by 15 feet.
- People who walk or drive through flood waters are at greatest risk.

Safety Tips: Flooding

- Know the elevation of your property in relation to nearby streams and dams. Determine if you live in a flood plain.
- Avoid walking or swimming in flood waters.
- Never drive into water no matter how deep it appears.
- Stay away from storm drains, ditches, ravines, or culverts.
- If you come upon flood waters: stop, turn around, and find an alternate route. Seek shelter on higher ground.
- Avoid bridges, roads, and other areas that are known to flood.

Safety Tips: Blackouts

- Use only flashlights. Never use candles or an open flame.
- Turn off all electrical appliances and equipment.
- Do not run a generator inside your home or garage.
- Do not connect the generator to your home’s electrical system.
- If a generator is used, connect equipment directly to outlets on generator.
- Avoid opening the refrigerator and freezer.
- Backup computer’s operating system and files regularly.

What to do Before Severe Weather Strikes…

- Gather information.
  - Discuss the type of hazards that could affect your family. Know your home's vulnerability to storm surge, flooding, and wind.
- Meet with your family to create a plan.
  - Locate a safe room or the safest area in your home. Remember the safest place may not be in your home but in your community.
  - Determine escape routes from your home. Establish meeting places.
  - Have an out of state friend or family as a point of contact for your family.
  - Make a plan for what to do with your pets.
  - Identify non-perishable emergency and disaster supplies.
- Implement your plan.
  - Post emergency numbers by the telephone.
  - Install safety features such as fire extinguishers, smoke detectors, hurricane shutters, etc.
  - Inspect home for potential hazards or items that can move, fall, break, or catch fire. Correct the hazards as soon as possible.
  - Have your family learn basic safety measures such as CPR and how to dial 911. Also, have them know when and how to turn off your home's water, gas, and electricity supplies.
  - Stock at least three days worth of non-perishable emergency and disaster supplies.
  - Assemble a disaster supply kit. Store the kit in a sturdy, easy-to-carry container such as a backpack or duffle bag. Important papers such be stored in a waterproof container.
- Practice and maintain your plan.
  - Ensure your family knows the meeting places, telephone numbers, and safety rules by conducting drills.
  - Inspect and test smoke alarms, fire extinguishers, and other safety features.
  - Replace stored food and water every 6 months.

Disaster Supply Kit

- First Aid Kit and essential medications
- Non-perishable foods to include canned foods with can opener
- At least three gallons of water per person
- One regular pair of clothes for each person to include protective clothing such as gloves, rain gear, and hard hat
- One bedding set or sleeping bag for each person
- Battery powered radio, flashlight, and extra batteries
- Special items for infant, elderly, or disabled family members
- Written instructions on how to turn off electricity, gas, and water if authorities advise you to do so
- Fire extinguishers and other needed safety supplies such as plywood and sandbags
- Important documents such as driver's license, social security card, proof of residence, insurance policies, deeds, birth and marriage certificates, tax records
- Extra cash

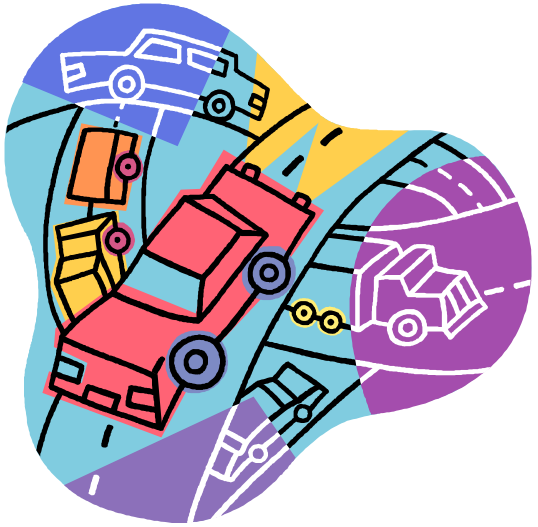
Evacuation Do's & Don'ts

DO

- Stay calm
- Leave pets unless you are staying with friends or family
- Keep pets inside
- Leave plenty of food and water
- Turn off lights and appliances except for refrigerator and freezer
- Lock windows and doors
- Use as few vehicles as possible
- Tune to the emergency broadcasting station
- Use travel routes specified by local authorities and posted signs

DON'T

- Overreact
- Go to your child's school
- Go home if you are at work
- Use shortcuts



What to do After Severe Weather Strikes…

- Listen to the radio for information and instructions.
- Stay out of damaged areas.
- Watch for fallen power lines.
- Use a flashlight to inspect for damage. Do not use candles or other means of open flame inside or outside your home.
- Walk the perimeter of your house before going in.
  - Check the foundation, porch roofs, overhangs, step connections to house, etc.
- Watch for displaced animals, vermin, rodents, or snakes.
- Turn off the electricity and gas supply to your home until informed to do differently.

Conclusion

- No place is safe against severe weather.
- The best plan is to be prepared. Have emergency supplies ready and identify an approved shelter.
- Remember when sheltering to stay away from windows and doors.
- If you are told to evacuate, do so without delay!
- Do not return to your home until advised to do so and then proceed with the utmost caution.

References:

- American Red Cross: “Disaster Safety” -www.redcross.org
- National Oceanic and Atmospheric Administrative: “Weather Safety” - www.noaa.gov
- The Weather Channel: “Severe Weather” – www.weather.com